

LEE -- 10/743,454
Client/Matter: 021906-0307405

REMARKS

Applicant has carefully reviewed the Examiner's Office Action dated July 11, 2005, in which the Examiner rejected claim 1 under 35 U.S.C. 103(a) as being unpatentable over Wang et al.(US 6,395,635) in view of Wang et al.(US 2003/0003745).

Claim Rejections under 35 U.S.C. 103(a)

The rejection of claim 1 under 35 U.S.C. 103(a) as being unpatentable over Wang '635 in view of Wang '745 has been carefully considered but is most respectfully traversed.

Applicant wishes to direct the Examiner's attention to the basic requirements of a prima facie case of obviousness as set forth in the MPEP § 2143. This section states that to establish a prima facie case of obviousness, three basic criteria first must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Further, MPEP §2143.03 states that all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

The present invention provides a method for planarizing a surface of a semiconductor wafer after an insulator layer is deposited on the semiconductor wafer. A polishing process using water is performed after a first polishing process using slurry, thereby preventing scratches on the semiconductor wafer and increasing a yield of the semiconductor wafer. The first polishing process may be, for example, a conventional CMP process (See, e.g., the specification at page 5, lines 5-6.)

In contrast, Wang '635 discloses a method for reduction of tungsten damascene residue using a CMP process. That is, Wang '635 describes a method for polishing an exposed surface after a main CMP process for planarizing the semiconductor. Accordingly, the CMP process of Wang '635 is different from that of the present invention at least because it requires the use of a slurry to planarize the surface followed by the use of a slurry to polish the surface and remove the tungsten damascene residue.

Further, in the present invention, an IMD deposited over metal line is both polished and planarized. However, in Wang '635, metal deposited on an IMD is polished by CMP specifically to remove excess metal on the semiconductor surface. Accordingly, the target of

LEE - 10/743,454

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the CMP process of the present invention differs from that of Wang '635. Since Wang '635 seeks to achieve a different result, namely removal of damascene residue, those skilled in the art would not look to the teachings of Wang '635 to create the method as recited by claim 1. With respect to Wang '745, the Applicant reiterates (from the June 21, 2005 Amendment) that Wang '745 does not teach polishing by water. Therefor, Wang '745 does not cure the deficiencies of Wang '635. Accordingly, the applicant respectfully submits that the rejection must be withdrawn.

As stated above, the prior art references do not show, independently or in combination, the present invention. Accordingly, it is respectfully submitted that claim 1 defines a patentable invention, and is therefore allowable.

CONCLUSION

Applicant believes that this is a full and complete response to the Office Action. For the reasons discussed above, Applicant now respectfully submits that all of the pending claims are in complete condition for allowance. Accordingly, it is respectfully requested that the Examiner's rejections be withdrawn and that claim 1 be allowed in its present form.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects, in order to place the case in condition for final allowance, then it is respectfully requested that such amendment or correction be carried out by Examiner's Amendment and the case be passed to issue.

Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, the Examiner is invited to telephone the undersigned.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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